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ABSTRACT

The significant number of firefighter trainees experiencing performance evaluation anxiety during fire training school was addressed by the implementation of anxiety reduction and performance enhancement strategies. Audiotape recordings were chosen as the primary intervention medium to facilitate program effectiveness within an established fire training regimen. The intervention modalities of relaxation training, cognitive therapy, and mental imagery were implemented with 10 firefighter trainees. Two primary screening devices, the Text Anxiety Inventory (Speilberger 1980) and the State-Trait Anxiety Inventory (Speilberger 1983) were used to determine the preintervention and postintervention levels of performance evaluation anxiety. The results indicated measurable positive anxiety-reduction effects with significant improvement in performance. It was concluded that the performance improvements were attributed to the vivid imagery dialogue and that this type of training presented on audiotape is most effective when used in conjunction with conventional training programs. (Includes 34 references. Appendixes to the study include measuring instruments, performance evaluations, relaxation dialogue, and imagery dialogue.) (Author/KC)

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USING RELAXATION, COGNITIVE THERAPY AND MENTAL IMAGERY TO REDUCE TEST ANXIETY AND IMPROVE PERFORMANCE AMONG FIREFIGHTER TRAINEES

by

David S. Mogen

A Practicum Report

Submitted to the Faculty of the Center for the Advancement of Education at Nova University in partial fulfillment of the the requirements for the degree of Master of Science.

September/1990

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David s. Mogen

Abstract

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Descriptors: Test Anxiety/Mental Practice/Imagery/Visualization/ Relaxation training/anxiety/Stress/Stress Management/Cognitive Interference/Learning Psychology/Visuo-Motor Behavior Rehearsal/ Neuro-physiologic Autoregulation During Prolonged Space-flight/ Systematic Desensitization/cognitive Behavior Modification/Rational Emotive Therapy/

The significant number of firefighter trainees experiencing performance evaluation anxiety during fire training school was addressed by the implementation of anxiety reduction and performance enhancement strategies. Audio tape recordings were chosen as the primary medium for the administration of the intervention modalities to facilitate program effectiveness within an established fire training regimen. The interventions modalities of Relaxation Training, Cognitive Therapy and Mental Imagery were implemented to address the solution, strategies most relevant to this setting. Two Primary screening devices, the Text Anxiety Inventory (Spielberger, et. al., 1980) and the State-Trait Anxiety Inventory (Spielberger, et. al., 1983) were employed to determine the pre-intervention and post-intervention levels of performance evaluation anxiety. The results indicated measurable positive anxiety-reduction effects with significant improvement in performance. It was concluded that the performance improvements were attributed to the vivid Imagery dialogue and that this type of training presented on audio tape is most effective when used in conjunction with conventional training programs. Appendices included measuring instruments, performance evaluations, Relaxation dialogue and Imagery Dialogue.

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Practicum Title Using Relaxation, Cognitive Therapy and Mental Imagery to Reduce Test Anxiety and Improve Performance Among Firefighter Trainees.

Student's Name David S. Mogen

Program Site Miami Beach Fire Dept. Date July 26, 1990

Observer's Name James W Barrett James W. Barrett
(please print---------and sign)

Observer's position Lieutenant Phone # 673-7140

Observer's comment on impact of the project (handwritten):

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CHAPTER I

Purpose

Introduction

An analysis of the Fire Rescue occupation reveals a number of important observations. Individuals in this profession undergo constant doses of low to moderate stress levels with occasional doses of high stress levels. The causes of these stress responses can be emotionally difficult, physically draining and a threat to their personal safety. Yet, these individuals see this work as exciting and extremely rewarding.

It is important for individuals considering employment in the fire service to be exposed to levels of stress during their training which would be comparable to the levels they will encounter on the job. Quick thinking and appropriate action under stressful conditions is the essence of the successful firefighter. Techniques to manage the anxiety of evaluative situations in order to facilitate appropriate learning and performance during fire training are presented in this practicum.

Target Population

The population targeted for the administration of this practicum consisted of ten firefighter trainees. After a rigorous selection process, these individuals are hired on a probationary status by a city fire department in Southeast Florida. This selection process involves an open competitive

civil service examination in which approximately twelve hundred applicants are registered. Approximately one hundred applicants are then chosen to compete in a ten-item physical agility test which establishes a ranking number on an eligibility list. Approximately twenty applicants then undergo an extensive background investigation conducted by the police department of the city.

This background investigation includes an eight page past history questionnaire, a three hour psychological profile testing battery, a four hour physiological testing battery, a physician's examination, a one hour psychological oral interview, a one hour psychiatric oral interview and a three hour polygraph. Upon completion of the background investigation, the applicants are administered an oral interview by fire department officials, thus, completing the selection process. The applicant is aware and understands that at any time during the selection process, disqualification could occur.

The firefighter applicants are then required to undergo a nineweek, community college level training program which prepares them for the Florida State Firefighter certification examination. The trainee is aware and understands that at any time during the training program, disqualification could occur.

Practicum Setting

The setting of this practicum was within the training program of the city fire department and was conducted primarily

at the fire department facilities with adjunct facilities located at the nearby fire academy. The fire department facility is one of four working fire stations with a separate training and support services division building set adjacent to the main fire station building. Training classes were conducted from 7:00 a.m. to 4:00 p.m., Monday through Friday. During the training program, the trainees were paid a training salary without an employee benifits package or trade union representation since they were probationary employees.

The trainees underwent a rigorous, some-what accelerated nine-week, boot-camplike basic fire training consisting of: physical training, class lectures and hands-on psychomotor performance skill activities. The military-like atmosphere required all trainees to be clean-shaven, hair length of military specifications, proper uniform at all times and regular inspections using proper formations and military protocol.

The morning physical training was conducted from 7:00 a.m. to approximately 8:30 a.m. each day and was designed to progressively condition the firefighter trainee to the physical rigors and expectations required to effectively perform on the job. Physical training consisted of alternating days of running and calesthenics with proper stretching, warm-up and cool-down included. Adequate aerobic conditioning was required to be achieved by the conclusion of the nine-week program, sufficient enough to allow the trainee to run/walk one and one-half miles

in twelve minutes. Failure to meet this standard subjected the trainee to dismissal from the fire training program and subsequent dismissal from the fire department.

Class lectures required each trainee to take good notes and pay strict attention to the information presented by the instructors, some of which was not included in the required training textbook.

The hands-on, psycho-motor skills or "performance objectives" were the basic performance skills required on the job. To gain proficiency in these skills, the trainee was required to practice them on personal time as well as the time provided for in the fire training program.

A trainee had two opportunities to pass each of eighteen written multiplechoice examinations and two opportunities to pass each of twelve performance evaluations. Trainees were required to achieve seventy percent on all written tests and a certain number of minimum points specific to each performance test to pass. The field performance evaluation scores, however, were indicated to the firefighter trainee only as pass/fail. A trainee who failed the first opportunity of a written multiple choice examination was given the second opportunity as a completion examination. Trainees were subject to dismissal from the training program and subsequent dismissal from the fire department if these standards were not met.

A demerit system was established to ensure adherence

to the rules and regulations of the training program. One to four demerits were issued for infractions pertaining to hair regulations, improper uniform, absenteeism, tardiness, insubordination, failure to follow instructions and others as specified in the rules and regulations manual issued to each trainee. At the beginning of the sixth week, the demerits issued for a particular infraction were doubled. Trainees were subject to dismissal from the training program and subsequent dismissal from the fire department if thirty demerit points were accrued at any time during the fire training program.

When reviewing data from the Background Information Questionnaire (Appendix A:59),which was administered to 10 fire training graduates, it was found that the problem documentation population was predominantly white, 80 percent, with 20 percent Hispanic and zero percent black. All of the graduates were male, 10 percent were in their forties and the rest were in their twenties and thirties. Sixty percent were married, 40 percent were single with 10 percent divorced. Fifty percent had children living with them and 70 percent had parents or in-laws living within 50 miles. Forty percent had prior military service, 100 percent had completed high school while 10 percent had completed an associates degree and 40 percent had completed a Bachelor's degree.

When further reviewing data from the Background Information Questionnaire, administered to 10 firefighter trainees, it was

found that the target population was predominantly White, 80 percent, with 20 percent Hispanic and zero percent Black. All of the target population were male, 30 percent were in their forties and the rest were are in their twenties and thirties. Forty percent were married, 60 percent were single with 0 percent divorced. Twenty percent had children living with them and 70 percent had parents or in-laws living within 50 miles. Twenty percent had prior military service, 100 percent had completed high school while 10 percent had completed an associate's degree, 50 percent had completed a bachelor's degree and 10 percent had completed a master's degree.

The fire training staff consisted of a Training and Support Services Fire Chief, a Fire Training Captain, a Fire Training Lieutenant, who was also the Program Coordinator and head instructor, and the various state certified fire training instructors. The fire training instructors are also state certified firefighters and state certified Emergency Medical Technicians (E.M.T.) or Paramedics who are employed by the fire department and taught fire training classes on their off-duty days.

The fire department itself is divided into six divisions with three divisions working shifts requiring the firefighter to be on duty for twentyfour hours and off duty for forty-eight hours.

This author is a state certified firefighter and E.M.T.

employed by the fire department. Special authorization was obtained from the Support Services Division Chief and the Fire Training Lieutenant to conduct this practicum project on off-duty days. This author underwent this same training program one year ago and was intimately familiar with the rigorous demands placed upon the target population.

Most people agree that anxiety is a very common aspect of human life and, over the years, many researchers have attempted to identify the cognitive responses that define it.

Sarason, 1986, identified the anxious person as "prone to anticipate rejection, humiliation and deprecation by strangers as well as friends. These expectations of harm can result in high levels of bodily mobilization for danger." This arousal of the autonomic nervous system (rapid heart beat, sweaty palms, yawning, butterflies, etc.), is experienced in firefighter trainees before, during, and after performance skills tests. The stress experienced by the firefighter trainee is manifested as an awareness of the demand to obtain passing scores on the fire training examinations. The nature of the importance of this challenge becomes evident when considering what is at stake for the firefighter trainee. As stated in the previous chapter, 60 percent of the graduates and 40 percent of the target population were married. The percentage with children living with them was 50 and 20 respectively. This places a tremendous

burden of responsibility on the firefighter trainee to pass all of the examinations and comply with all of the training requirements to avoid possible termination of employment.

Other causes of the anxiety experienced by previous fire training graduates, in this author's opinion, might have been the amount of information that was required to be learned in such a short period of time, the strict, rigid, military-like training format and a lack of previous performance skill experience. In addition, a lack of the psychomotor skills inherent within the performance objective, a lack of practice and a lack of confidence had been expressed by previous fire training graduates themselves also greatly contributing to the weight put upon the shoulders of the target population.

This tremendous demand evokes either task-relevant or taskirrelevant cognitions or thoughts. Wine (1971) found that irrelevant (worry) responses distract attention away from the test-taking task and decreases performance.

Individuals low in test anxiety are able to set aside unproductive worries and task irrelevant thoughts, also referred to as "self preoccupations," and concentrate on the test at hand. According to Sarason (1986), self-preoccupied individuals become absorbed in the implications and consequences of failing. Highly test anxious individuals see a testing situation as difficult, challenging and threatening. They feel uncomfortable, or inadequate to handle the tasks on which they are being

evaluated. Test anxious individuals focus on the undesirable consequences of personal inadequacy. Self-belittling preoccupations are strong and interfere or compete with task-relevant cognitive activity. The individual expects and anticipates failure and loss of regard by others. Sarason (1986:21), stated that:

> Since many anxious people describe themselves as being tense and feeling that something terrible will happen, even though they cannot specify the cause of their worry, these self-preoccupations are likely to create cognitive interference that precludes an orderly, task-oriented approach to situational requirements.

The possible causes of these self-preoccupations as mentioned earlier and the subsequent cognitive interference, in this author's opinion, interract together and greatly magnify the test anxiety problem.

To determine the levels of anxiety the target population experiences during fire training, 10 fire training graduates were administered the Test Anxiety Inventory (Spielberger, Gonzalez, Taylor, Anton, Algaze, Ross and Westberry, 1980), hereinafter referred to as TAI (Appendix B:60). These fire training graduates underwent this same program one year previous to this study. They responded to the TAI questions based upon their memory of anxiety levels during the performance evaluations one year ago. It must be understood that the data obtained from the fire training graduates served only to document the existence of the problem. This practicum implementation was

conducted using a separate but similar target population of actual firefighter trainees undergoing the same fire training program.

In reviewing the scores of the graduates, (Table I:11), it was found that 40 percent rated themselves as almost never feeling confident and relaxed while taking the performance skills tests during fire training. Fifty percent stated they often had an uneasy, upset feeling during the evaluations, and 50 percent felt that even when they were well prepared for a performance test, they almost always felt very nervous about it. During the performance tests, 30 percent stated they felt very tense and 40 percent stated they almost always worried a great deal before taking an important performance evaluation. The feeling of tenseness is described in the literature as the "emotionally" component of test anxiety while "worry" is described as the second component of test anxiety Deffenbacher (1977, 1978), Morris, Davis and Hutchings (1981).

When further comparing the TAI scores of the fire training graduates with the normative data based on 320 regional community college students (Table II:12), it was found that 40 percent of the graduates scored above the 50th percentile for total Trait test anxiety, 30 percent scored above the 50th percentile on the worry component for Trait test anxiety and 40 percent scored above the 50th percentile on the emotionality component for Trait test anxiety.

TABLE I

A Comparison of Test Anxiety Inventory
Scores for Fire Training Graduates
Problem Documentation *

Question #	NUMBER AND MANNER IN WHICH GRADUATES RESPONDED			
	Almost Never	Sometimes	Often	Almost Always
1	4	5	1	0
12	2	5	1	2
13	6	4	0	0
19	4	3	2	0
EMOTIONALITY				
2	0	3	5	2
8	0	4	3	3
9	1	3	1	5
10	2	3	3	2
11	1	3	3	3
15	6	1	2	1
16	0	4	2	4
18	0	6	3	1
WORRY				
3	4	5	1	0
4	7	2	0	1
5	2	6	2	0
6	6	4	0	0
7	1	4	4	1
14	4	5	1	1
17	0	3	5	2
20	1	4	4	1

* Test Anxiety Inventory (Appendix B:42)

TABLE II

A Comparison of Mean Test Anxiety Inventory and Percentile Ranking Scores for Fire Training Graduates and Community College Students

Scale	Fire Training Graduates Males	Community College Students Males
N	10	136
TAI TOTAL Mean	42.90	38.75
Worry Mean	15.10	14.36
Emotionality Mean	19.40	16.36

Percentile Ranking of Graduate's TAI Scores

Student #	Worry	% Rank	Emotionality	Rank	Total	Rank
1	11	35	16	54*	35	40
2	11	35	23	90	41	68*
3	15	65*	16	54*	39	51*
4	17	78*	24	93*	52	88*
5	21	91*	23	90*	55	90*
6	18	81*	26	96*	57	92*
7	14	57*	15	44	36	46
8	13	53*	13	30	31	33
9	10	91*	10	97*	57	92*
10	10	28	10	10	26	16

* Scores below the 50th percentile

To ensure accuracy in performance skill measurement, 80 percent of the fire training graduates should have scored above the 50th percentile on all three components of Trait test anxiety. Therefore, 40 percent of the graduates exhibited unacceptable levels of Total Trait test anxiety, 50 percent exhibited unacceptable levels of the Worry component, and 40 percent exhibited unacceptable levels of the Emotionality component.

This author recognizes and understands that the skills and abilities gained by the fire training graduates, as a result of conventional training practices were, in fact, adequate to allow them to pass their performance evaluations and, ultimately, to pass the State Firefighter Certification Examination. However, in this author's opinion, due to the cognitive interference caused by test anxiety, the scores on these evaluations might have been an inaccurate measure or, an understatement of the graduates' true ability. This practicum project, therefore, sought to solve the problem of the target population who exhibited unacceptable levels of performance evaluation anxiety and subsequent performance decrements..

The author's main desired outcomes were to reduce cognitive interference, instill confidence and enhance the learning skills among the target population in an effort to reduce performance evaluation anxiety. It was speculated by this writer that the target population would feel more confident

and at-ease before and during Intervention Training Performance Evaluations (ITPE's), allowing them to perform better on those evaluations. The effectiveness of this practicum was determined by comparing before-intervention and after-intervention measures of Trait anxiety, State anxiety, cognitive interference, actual performance evaluations and anxiety signs and symptoms.

The following outcome objectives were expected to directly relate to the previously stated problem:

1. After 10 weeks of specialized anxiety reduction instruction, 80 percent of the target population who participated in Relaxation Training, Cognitive Therapy, and Mental Imagery techniques were expected to improve their pre-intervention scores and achieve the 50th percentile or above as measured by the Test Anxiety Inventory (TAI) (Appendix B:60) at post-intervention.

2. During 10 weeks of specialized anxiety reduction instruction, before each of five Intervention Training Performance Evaluations (ITPE), 80 percent of the target population participating in Relaxation Training, Cognitive Therapy, and Mental Imagery techniques were expected to show an anxiety reduction improvement from their CTPE scores and achieve the 50th percentile or above as measured by the State Anxiety section of the State-Trait Anxiety Inventory (STAI-S) (Appendix C:61).

3. During 10 weeks of specialized anxiety reduction instruction, before each of five Intervention Training Performance Evaluations (ITPE's), 20 percent of the target population participating in Relaxation Training, Cognitive Therapy and Mental Imagery techniques were expected to improve their CTPE scores and experience fewer signs and symptoms of test anxiety as measured by comparing the Anxiety Signs and Symptoms Checklists (ASSC) (Appendix D:62) of the two evaluations..

4. After each of five Intervention Training Performance Evaluations (ITPE), 30 percent of the target population participating in Relaxation Training, Cognitive Therapy and Mental Imagery techniques were expected to score two points or more above the Conventional Training Performance Evaluations (CTPE), as measured by comparing the scores obtained on the two evaluations (Appendix E:63).

5. During 10 weeks of specialized anxiety reduction instruction, after each of five Intervention Training Performance Evaluations (ITPE), 80 percent of the target population participating in Relaxation Training, Cognitive Therapy and Mental Imagery techniques, were expected to show and anxiety reduction improvement from their CTPE scores and achieve the 50th percentile or above as measured by the Trait Anxiety section of the State-Trait Anxiety Inventory (STAI-T) (Appendix F:69).

CHAPTER II

Research and Solution Strategy

Over the past 30 years, test anxiety research has developed into a field of major educational interest. The scope of this problem is documented by dozens of studies which define test anxiety and examine ways to treat test anxious individuals. As the amount of literature grows, the concept of test anxiety remains diverse and, often, in conflict (Sarason, 1984).

Defining test anxiety is as complex as the various methods devised to treat it. Test anxiety has been conceptualized as both an emotional state and a personality trait characteristic. This has led to some confusion with respect to anxiety research, data and results.

According to Spielberger's (1966) analysis, State anxiety is the feelings of stress caused by a particular threatening situation. Gjesme (1982:172), further stated that "these feelings of tension and apprehension are accompanied by or associated with activation of the autonomic nervous system."

Trait anxiety, on the other hand, is a relatively stable predisposition for a greater frequency in State anxiety responses when situations are perceived as harmful or threatening. In general, the literature indicates that individuals with high Trait anxiety, are concerned with fear of failure and, therefore, should be more likely to perceive greater threats in ego-involved

situations and to respond with greater elevations in State anxiety than those who are relatively low in Trait anxiety.

However, Gjesme pointed to Endler (1975) who reported a number of studies indicating conflicting results regarding the above information. Even more complex and confusing, the literature indicates that both State and Trait anxiety have two sub-components (worry and emotionality), which will be explained in more detail later.

Generally, the trait test-anxious individual as a specific form of anxiety, is predisposed to experience elevations in State anxiety pertaining to evaluation situations that are perceived as personally threatening or dangerous. Thus, the difference in general Trait anxiety and evaluation-specific Trait anxiety is the "nature and characteristics of stimuli that are perceived as threatening, not the anxiety state responses per se," Gjesme (1982:172).

In 1967, Liebert and Morris introduced a two-component conceptualization of anxiety into the test anxiety literature. According to this view, worry and emotionality are the two major components of State-Trait anxiety. Worry refers to the cognitive elements of the anxiety experience, such as negative expectations and concerns about oneself, the situation at hand, and potential consequences. Emotionality refers to one's perception of autonomic nervous system arousal and unpleasant feelings such as nervousness and tension. Worry and emotionality responses

are thought to be different in the sense that the two anxiety components are aroused and maintained by separate situational conditions.

A study by Head and Lindsey (1983) was done to determine the effects of Trait anxiety and test difficulty on the State anxiety of 32 undergraduates. The Test Anxiety Inventory assessed Trait anxiety, a modified version of the State-Trait Anxiety Inventory assessed State anxiety and a specially developed Educational Psychology Recall Test assessed task difficulty. Results indicated that Trait anxiety and test difficulty level affected State anxiety.

In this author's opinion, the nature and characteristics of the tasks required of firefighter trainees during training are difficult, dangerous and threatening. Firefighter trainees are required to learn how to work blindly in smoke-filled burning buildings and to carry heavy, awkward loads up and down ladders in emergency situations. Many other tasks on which the trainee is evaluated, must be performed within certain time limits. It has been documented by this author that these tasks, within an evaluation situation, can create abnormal levels of State-Trait anxiety.

Developed by Spielberger, Gonzalez, Taylor, Algaze and Anton (1978), the TAI (Appendix B:60) provides a general, situationspecific measure of Trait anxiety with worry and emotionality subscales. The State section of the State-Trait

Anxiety Inventory developed by Spielberger, Gorsuch and Lushene (1970), (Appendix C:61) provides a more situation-specific measure of State (emotionality) anxiety. These measuring tools were used in this practicum. It was important to have separate measures of Trait and State anxiety in addition to the separate components (worry and emotionality). A measure of State (worry) anxiety, which was used in this practicum, is discussed later.

Generally speaking, test anxiety literature has not made clear the relationship between anxiety reduction and improvements in performance. Finger's (1975) review of the literature revealed that performance improvements were obtained in only 16 of 54 (29.6 percent) studies.

Deffenbacher's (1978) review of the literature, however, found several studies indicating the relationship between test anxiety and performance. He found that high test-anxious individuals perform more poorly than low test-anxious individuals in a variety of contexts including classroom tests, grade-point averages, intelligence and aptitude tests and reading tests.

Closely related to the worry and emotionality components of test anxiety, and, one of the most popular theories is based primarily on the cognitive interference model. According to this model, test anxiety is thought to produce task-irrelevant responses (concern for passing, thoughts of leaving, concern over how others are doing, etc.) that interfere with the task-relevant responses necessary for good test performance, Mandler

and Sarason (1952).

Wine (1971), suggested that the debilitating effects of test anxiety on performance may have an attentional explanation. Wine felt that high test-anxious students become preoccupied with task-irrelevant worry responses and do not devote enough attention to the test-taking task.

A study conducted by Deffenbacher (1978), demonstrated the relationship of cognitive interference to performance deficits. This study investigated sources of interference in highly test anxious subjects performing under evaluative stress. Students from the upper and lower 30 percent of the Test Anxiety Scale distribution solved difficult anagrams under two evaluative conditions: high stress (evaluative) and low stress (nonevaluative). It was found that the high-anxiety high stress group reported more anxiety during testing, rated themselves, their abilities and the task more negatively, and solved fewer anagrams. In addition, this group estimated spending less time on task, experienced more interference from anxiety and reported greater distraction of attention due to heightened autonomic arousal (emotionality), than did either the high-anxiety-low-stress or the low-anxiety-high-stress groups.

A review of the literature by Morris, Davis and Hutchings (1981) supported a cognitive-attentional view of performance deficits pointing to the worry component as most consistently

and most strongly negatively related to academic performance whether it be examination scores or course grades. Along the same line, this author is surprised to report the studies of Kirkland and Hollandsworth (1980), Deffenbacher (1978) and Galassi, Frierson and Sharer (1981) which, interestingly, suggested that the emotionality component, and subsequent autonomic arousal, does not hinder performance but that the student may actually be able to use it to facilitate performance.

Although, it has been demonstrated by Holroyd, Westbrook and Wolf (1978) that the emotionality component of test anxiety and actual autonomic arousal are related, it appears that the cognitive interference associated with the worry component of test anxiety, and subsequent performance deficits are not attributable to elevated levels of autonomic arousal since both high and low test anxious individuals in this study experienced virtually identical levels.

For the purpose of this practicum, the Anxiety Signs and Symptoms Checklist, adapted from Everly and Girdano (1980), (Appendix D:62), was used to measure autonomic nervous system arousal. The aforementioned study is the basis upon which little change in autonomic arousal between conventional and intervention training was expected.

Interfering cognitions (unwanted thoughts) during testing are common, and, as demonstrated by Galasse, Frierson and Sharer

(1981), negative thoughts increase as a test progresses. Sarason and Stoops (1978) found that stress from instructions given before a test-taking task resulted in significant post-task reports of cognitive interference by high, but not low test-anxious subjects.

For the purpose of this practicum, this author attempted to measure cognitive interference using the Trait Section of the State-Trait Anxiety Inventory (STAI-T) (Appendix F:69). This scale is designed to measure Trait worry responses, but, since it was administered immediately following a stressful evaluation situation, it was expected to provide an accurate measure of State (worry) responses.

The interference model implies that high and low test-anxious students have mastered the content on which they are to be tested. Another model has been proposed in recent research as a deficit in either study skills or test strategy which results in a reduction in test performance.

The skills deficit interpretation suggests that high test-anxious students may have poorer study skills than those lower in anxiety leading to less thorough initial learning (Tobias, 1986:40). Tobias stated that "poor test performance then, is a function of this deficit and the elevation in anxiety is attributable to the students' awareness of their incomplete learning."

Culler and Holahan (1980) investigated the relationship

between high and low test-anxious individuals' academic performance, differences in study-related behaviors, and differences in the effectiveness of studyrelated behaviors for both groups.

Results indicated that high test-anxious individuals had significantly poorer study habits and spent more time studying than low test-anxious individuals. Students' study time per week was significantly related to the grade point average (GPA) for the high test-anxious group but not for the low, suggesting that anxious students may compensate for poor skills by studying more hours. In addition, these results demonstrated poorer GPA's associated with test anxiety. These findings tend to contradict the common stereotype of the high test-anxious student who knows the subject matter but "freezes up" at test time. In addition, it was found that students with good study skills exhibited high anxiety scores. What would account for this?

It becomes apparent when reviewing the available literature that neither the interference nor the deficit models are adequate to explain all the test anxiety research. The evidence suggests that both cognitive interference and study skills deficits interact together to produce performance deficits.

Tobias' (1986) review of the literature suggested that humans have a limited capacity for processing information which

brings both pieces of the test anxiety puzzle together. Tobias (1986:48) states:

> The negative preoccupations associated with test anxiety are caused by both poor test preparation and as a result of fear of failure. The cognitive representation of these preoccupations absorbs some portion of the person's information processing capacity leaving less capacity for coping with task demands.

In the same way, it has been observed by Tobias (1980) and Wine (1980) that the performance of students who are preoccupied with negative self-concerns, also has a negative affect on learning. They found that when the cognitive capacity of the student is partially engaged by negative self-talk, less capacity is available for performance on cognitive tasks, thus reducing learning.

The previous findings suggest two solution strategies that will enhance performance, Wine (1980):

1. Reducing the negative self-talk.
2. Reducing the cognitive processing demands of the task.

The first solution strategy involves lessening the students' perceived threat posed by the task, re-assuring the students about their abilities to succeed and suggesting that students concentrate more on the task and less on irrelevant matters. The second solution strategy involves increasing the organization of instructional content, reducing task difficulty and decreasing reliance on memory. Five intervention modalities

have been identified in the literature as closely associated with the first solution strategy.

Relaxation Training (RT) reduces emotionality in testing situations. RT may include instructions that provide information and directions that typically involve some form of cognitive activity, but it usually does not attempt to modify worry cognitions.

According to Spielberger and Vagg (1987) Systematic Desenitization (SD) has been investigated more often than any other test anxiety treatment. SD concentrates on the reduction of emotional reactions during examinations. It may also involve cognitive processes that instructs subjects to visualize themselves relaxing while they imagine they are in a testing situation. Therefore, SD targets the emotionality component and does not attempt to alter worry cognitions.

Cognitive Behavior Modification (CBM), concentrates primarily on modifying or eliminating the worry responses associated with poor test performance but also may include elements to reduce the emotionality component of test anxiety.

Rational Emotive Therapy (RET) is also concerned with modifying the worry cognitions of test-anxious students by helping students to identify, confront and refute their irrational beliefs about tests which, in turn, indirectly influences emotionality.

Cognitive Therapy (CT) is primarily concerned with modifying or eliminating worry cognitions. The goal of CT is to eliminate negative thoughts and self-talk during examinations and to replace them with positive thoughts that will facilitate test performance.

The major goal of cognitively focused modalities (CT, RET, CBM), is to help students perceive evaluations as less threatening. However, CT and CBM also help students to organize and structure their thoughts in test situations thus indirectly contributing to improved test-taking skills.

A sixth intervention modality, Study Counseling (SC), involves study skills training which teaches students how to study for tests and trains students in how to take tests. Study skills training usually involves techniques to enhance the understanding of what is being asked so that the appropriate information can be remembered and clearly communicated. This protocol falls under the second solution strategy as previously mentioned.

This practicum focused on the first solution strategy of test anxiety through the intervention modalities of Relaxation Therapy, Cognitive Therapy and Cognitive Behavior Modification. This researcher also recognized the roll of study skills training in the treatment of test anxiety, and chose a modified version of this modality to target the second solution strategy of test

anxiety. By using relaxation dialogue consisting of deep breathing, progressive muscle relaxation, positive affirmations, and Mental Imagery (Appendix G-L:70-92 to practice specific targeted performance objectives, this author believed that the study skills behavior in the target population would be improved, thus helping to improve Intervention Training Performance Evaluation (ITPE) scores.

In recent years, more attention has been drawn to the "rightbrain/left-brain" theory of learning. In essence, right-brain learners work best with processes within themselves and are intuitive or prefering holistic and creative images. Left-brain learners, on the otherhand, work best with data coming from the outside world and have a preference for dealing with numbers, words and logic, (Hill, 1986).

It has been demonstrated by Ostrander and Schroeder (1979), Carrier, et. al. (1983), Fugitt (1983), Neal (1980), and Barnes (1976), that right-brain teaching calls for the use of slow, sixty beat-per-minute music, visual imagery, and relaxation techniques. In a review of the literature by Hill (1986), it was shown that relaxation techniques have been used to learn foreign languages, to enhance academic-area memorization, to accelerate some task performances by reduction of physiological tension and to reduce anxiety and enhance performance in music students.

Teich and Dodeles (1987) have documented a technique developed by Richard M. Suinn, Colorado State University psychologist, that is used to strengthen the performance skills of a variety of people. This technique, called Visuo-Motor Behavior Rehearsal, or VMBR combines progressive muscle relaxation and mental imagery to rehearse actual real-life scenes over in one's mind. It has been used to enhance the performance of speakers, and U.S. Olympians in Nordic skiing, the biathlon, and the pentathlon.

In recent years, sports psychologists have been using these techniques to enhance the performance of athletes. James E. Loehr, psychologist at the Nick Bollettieri Tennis Academy in Bradenton, Florida, has found that "different emotional states stimulate the production of a whole range of neurotransmitters, or brain hormones, which affect everything from alertness and concentration to depression," Teich and Giselle (1987:54). In addition, psychologist Bruce Ogilvie uses a technique known as self-talk to rescript the language athletes use to approach other players, the racket or club, or even the ball.

Porter and Foster (1988), as cited by Garfield (1984), reported that NASA researchers are using imagery and biofeedback through a project known as "Neurophysiologic Autoregulation During Prolonged Spaceflight." The rationale is based upon research showing that the brain can be imprinted with images

of a physical event before the acts have actually been performed. Once the images have been clearly imprinted, the actual event can be performed far more easily even though much of the actual training has been largely left out.

All of the aforementioned research clearly documents the effectiveness of the techniques and the strategies this author chose to bring about and measure the desired behavioral changes among the target population in this practicum. These strategies were chosen for the ease in which they were expected to fit into the already existing fire training program.

CHAPTER III

Methodology

Verbal authorization to implement this 10 week practicum research study was obtained from the Fire Training Lieutenant who was instrumental in obtaining final approval from the Support Services Division Fire Chief. This approval was contingent upon the agreement that the practicum project would not interfere with the fire training program. The people necessary for the completion of this project were the Fire Training Lieutenant, the performance evaluators, this author, the recording engineer and the target population.

The Fire Training Lieutenant conducted the conventional training program in the usual manner and assisted this author with scheduling and facilitation of the conventional and intervention training performance evaluations. The role of the performance evaluators was to conduct or assist with the conventional and intervention training performance evaluations, (CTPE and ITPE respectively).

The actual CTPE and ITPE performance objectives were identical except for the times when they were administered. The CTPE-PO's were administered after conventional training and the ITPE-PO's were administered after the intervention training. These evaluations were written by the Fire Training Lieutenant and administered by fire school staff, clearly

indicating the task objectives and number of points for each (Appendix E:63-68). These criterion referenced performance evaluations were adapted from minimum standards established by the local fire academy and State Fire Marshal.

The already existing conventional fire training program was a highly structured, rigid training program with little flexibility during normal working hours for this author to physically conduct the intervention training. Due to time constraints, originally-planned, once-per-week anxiety-reduction training sessions were not allowed. To prevent the practicum research study from further interfering with the conventional training program, audio tape recordings were selected as the primary medium for administering the intervention training program.

This researcher's role in the implementation of this practicum was to administer the practicum measuring tools, facilitate the administration of the CTPE's and ITPE's and to compose, perform and help record these audio tapes used by the target population.

The recording of these audio tapes was the first major task to be completed prior to the actual implementation of this practicum. The recording engineer was instrumental in helping to create these recordings using his own sophistocated recording equipment taking approximately 12 to 15 hours over a period

of two months to complete. This individual was kind enough to donate his time and the use of his equipment since he is a friend and enjoyed helping with this project.

All of the sound and voice dialogue was composed and performed by this author with the exception of the twelve-string guitar track which was composed and performed by the recording engineer. The relaxing sound was composed of ocean waves, windchimes, flute and guitar. The ocean waves were produced using synthesized "white noise" or static sound obtained from a clock radio equipped with this "sound soother" mode.

The dialogue, which was specific for each of the five targeted performance evaluations, contained five minutes of deep breathing, 10 minutes of progressive muscle relaxation, and 15 minutes of mental imagery and positive affirmations using similar guidelines as outlined by Richardson (1980) and Teich and Dodeles (1987). The directions and rationale for using these tapes (Appendix G:70) were also included in the dialogue. This researcher spent approximately six to eight hours researching and writing this dialogue. These tapes were individually issued to each member of the target population who was responsible for listening to them as often as possible during specified time frames without interfering with the normal study required for successful completion of the conventional fire training program.

The next task was to find and obtain the appropriate measuring tools used to measure the outcome objectives of this practicum. A review of the literature yielded the TAI (Appendix B:60), the STAI form Y-1 (Appendix C:61), and the STAI form Y2 (Appendix F:69) as well as where to obtain them. A telephone call to Consulting Psychologists Press, Inc., in Palo Alto, California yielded their catalog. This writer then purchased the TAI and STAI forms which, upon receipt, constituted written permission for their use in this practicum research study (Appendix M:96).

The TAI is a norm-referenced measuring tool with data available from large samples of college undergraduates, (1,449), college freshmen (1,129), high school (1,118), and for a smaller sample of community college students (320). The conventional fire training program was most academically similar to that of the community college student. Therefore, these norms were used to evaluate the outcome objectives of this practicum.

The STAI is also a norm-referenced measuring tool with data available from large samples of working adults (1,838), college students (855), high school students (424), and military recruits (1,964). Again, the norms for college students were chosen to measure outcome objectives.

Form Y-1 was used to measure the emotionality component of test anxiety; apprehension, tension and nervousness. It

has been found to be a sensitive measure of anxiety caused by stressful experimental procedures and by unavoidable real-life stressors such as imminent surgery, dental treatment, job interviews, or important school tests.

Form Y-2 was used to measure the worry component of test anxiety, which leads to cognitive interference and subsequent performance deficits.

The next task to be completed was to administer the Background Information Questionnaire (BIQ) (Appendix A:59) and the Test Anxiety Inventory (TAI) (Appendix B:60) to past fire training graduates, collecting the data to establish the existence of a problem. This BIQ data is presented on page five and the TAI data is presented in Tables I and II, pages 11 and 12. All of the previously mentioned activities were completed prior to the actual practicum implementation. The implementation of this practicum began April 19, 1990 and ran through July 9, 1990.

During week one, the target population was administered an orientation session including the BIQ and the TAI. Orientation also included a brief overview of the practicum project, being careful to gain the confidence of the target population without revealing too much information which might produce false-positive/negative results, etc. This TAI was used as the pre-test measure of Trait test anxiety for the target

population (Appendix B:60). The Orientation was administered at 9:00 AM on Tuesday and took approximately one hour.

In the second week's session, the target population was administered the first of five Conventional Training Performance Evaluations (CTPE's), which tested the trainee's ability to tie the Rescue Bowline (Appendix E:63). The target population was taught this Performance Objective (PO) one week prior, thus having a week to physically practice it.

Immediately prior to this CTPE, the target population was administered the STAI-S (form Y-1) inventory and the Anxiety Signs and Symptoms Checklist (ASSC).

The ASSC was adapted by this researcher from "What Are Your Signs of Stress and Distress," Everly and Girdano (1980). It is a situation specific, self-administered measuring tool designed to quickly measure the musculo-skeletal and other physiological signs and symptoms of autonomic nervous system response to the test anxiety situation.

This researcher then facilitated the pairing of the target population and preparing a 50 foot section of rope. An unbiased performance evaluator then administered the Rescue Bowline CTPE in the usual manner consistent with the fire training program. A vivid description of this performance evaluation is presented in the imagery dialogue (Appendix H:76-79).

Immediately after the CTPE, the target population was

administered the STAI-T (form Y-2) inventory (Appendix F:69) This writer then issued the first of the five intervention training audio tapes which the target population kept in their possession for listentng at every opportunity for approximately one week. The target population was instructed not to physically practice this PO during the week. This implementation session was conducted at 3:30 P.M. on Wednesday of this second week and lasted approximately one and one-half hours.

In the third week's session, the first of the five ITPE's, which retested the trainee's ability to tie the Rescue Bowline was administered. The STAI-S and ASSC were administered immediately prior to this evaluation which was conducted exactly the same as the CTPE one week earlier. This author again prepared the testing station with a 50 foot section of rope and the same unbiased evaluator retested the target population remaining consistent with the established fire training standards. Immediately proceeding this ITPE, the STAI-T and the Audio Tape Evaluation (ATE) (Appendix N:97) were administered by this author. This evaluation was administered at 3:00 P.M. on Thursday of this third week, and took approximately one and one-half hours.

The ATE, a 10-item questionnaire created by this writer, was designed to determine the extent to which the target population was able to actively mentally rehearse the

intervention training modalities. The answers to these questions were critical for gaining an insight into the effectiveness or ineffectiveness of this practicum project.

In the fourth week's session, the second CTPE was administered which evaluated the target population's ability to don the Self-Contained Breathing Apparatus (SCBA) within 45 seconds (Appendix E:64). Again, the target population learned this PO through the conventional fire training program one week earlier, thus having a week to physically practice it.

At approximately 9:00 A.M. on Monday of this fourth week, immediately prior to the CTPE, the target population was administered the STAI-S and the ASSC. This researcher then facilitated the preparation of the SCBA testing station and an unbiased performance evaluator administered the SCBA CTPE in the manner consistent with fire training program standards. A vivid description of this performance evaluation is presented in the audio tape imagery dialogue (Appendix I:80-83).

Immediately after this CTPE, this author administered the STAI-T and issued the second intervention training audio tape to each menber of the target population for one week's listening. Again, the target population was instructed not to physically practice this PO during the week.

One week later, week five, on Monday at 1:30 P.M., the second ITPE, which retested the target population's ability

to don the SCBA, was administered by this author. The STAI-S and ASSC were administered immediately prior to the ITPE which was conducted in the same manner as the CTPE with one notable exception. In addition to preparing the SCBA testing station, this writer was forced to retest the target population himself since an unbiased evaluator was unavailable. Remaining consistent with established fire training standards to achieve unbiased results was the number one priority. Immediately proceeding this ITPE, the STAI-T and the ATE were administered.

On Thursday, May 17 of this fifth week, after verbal feedback from the target population, the Fire Training Lieutenant requested that the practicum project be "put on hold" until after the State Firefighter Certification Examination. The target population felt the practicum was interfering with their practice time and that the project, in general, was "just one more thing to worry about." This writer had no choice but to cheerfully honor the original contingency agreement, postpone the implementation and hope that it could be resumed four weeks later after the state examination.

When reviewing the data gathered thus far, this researcher determined that the target population's concerns about being ready for the examination were somewhat justified. Considering that in order to determine if the intervention training audio tapes were working, actual physical practice of each of the

five targeted PO's had to be suspended while the trainees were listening to the tapes, each of them for one week. Unfortunately, this writer could see no other way to determine the effectiveness of the audio tape intervention training. Therefore, no midcourse research design changes or corrections were made, other than postponement, and the project was resumed four weeks later.

After the state certification examination, the firefighter trainees were required to undergo another four weeks of training which was very specific to the city's employment rules and fire department procedures and protocols. It was during this training that the practicum implementation was resumed and finally completed.

During the sixth week's session, at approximately 10:00 A.M. on Friday, June 15, the third CTPE was administered. This CTPE evaluated the target population's ability to identify and state the use of various tools and equipment carried on the fire engine (Appendix E:66). The trainees, of course, had already been taught this a few weeks earlier.

Again, just as before, the target population was administered the STAI-S and the ASSC immediately prior to the CTPE. This researcher then prepared the testing station, laying out the various tools and equipment to be identified. Scheduling an unbiased evaluator was again difficult so this author

performed the task consistent with fire department standards. A vivid description of this performance evaluation is described in the imagery dialogue (Appendix J: 84-87).

Immediately after the CTPE, the target population was administered the STAI-T. The third intervention training audio tape was issued with instructions not to physically practice this PO during the week but to only listen to the tape. This session lasted approximately one hour fifteen minutes.

On Thursday of the following week, week seven, at 1:30 P.M., the third ITPE on tools and equipment was administered. The STAI-S, ASSC, ITPE, STAI-T and ATE were administered at the appropriate times with one variation; the target population was pulled from regular class one by one throughout the afternoon for the administration of the ITPE. This was done in an effort to minimize the interference with the regularly scheduled fire training classes.

During week number eight, on Tuesday, June 26, the fourth CTPE was administered by this author. This performance evaluation measured the target population's ability to demonstrate the various fire department hose rolls and carries (Appendix E: 67). The STAI-S, ASSC, CTPE, STAI-T were administered appropriately by this writer. Again, an unbiased evaluator was unavailable so this author conducted the CTPE himself. The staggering of the target population throughout

the afternoon was again successful to keep the interference with the conventional training program to a minimum. A detailed description of this PO is presented in Appendix K:88-91. This evaluation began at 2:00 P.M. and was finished at approximately 4:10 P.M.

The fourth ITPE, week nine, was administered on Tuesday July 3rd at 3:00 P.M. In an attempt to remain consistent, everything was performed exactly the same as the CTPE one week previously. It was finished by 4:30 P.M.

When this researcher attempted to schedule the fifth CTPE for Friday of this week, he was informed that the conventional training program would be concluding on Monday, July 9, 1990. This was one week earlier than what was originally planned. Therefore, this author was unable to conduct the final CTPE and ITPE which was to evaluate the target population's ability to remove, carry and raise a 24 foot extension ladder in three minutes. The evaluation form (Appendix E:68) and the imagery dialogue which vividly describes this PO (Appendix L: 92) is included in this final report.

In the tenth week, the final session was conducted on Monday July 9 which entailed the administration of the post-test TAI. This author conducted this task at 9:00 A.M. and was completed at 9:30 A.M. This concluded the implementation of this practicum.

CHAPTER IV

Results

Evaluating the success of this practicum, required pre-intervention and post-intervention measures of Trait test anxiety, State (emotionality), State (worry), autonomic nervous system arousal, and actual performance.

When reviewing the pre-intervention TAI scores of the target population (Table III:43), it was found that 90 percent scored above the 50th percentile for all three components of Trait test anxiety (total, worry and emotionality) before practicum implementation. This is in sharp contrast to the TAI scores of the problem documentation population (Table II: 12) which found only 40 percent scoring above the 50th percentile. Since the outcome objective goal was 80 percent of the target population scoring at or above the 50th percentile at post-intervention, these results nullified the first outcome objective. No significant outcome objective improvement could be measured.

This data suggests that the target population was low in Trait test anxiety to begin with, unlike their predecessors one year previously. When further reviewing the TAI data, it was found that 67 percent of the target population did show slight post-intervention anxiety-reduction improvement.

TABLE III

A Pre-intervention and Post-intervention Comparison of TAI Mean and Percentile Ranking Scores for Firefighter Trainees and Community College Student Norms

Scale	Trainees pre-test Males	Trainees post-test Males	Community College Students Males
N	10	9	136
TAI Total Mean	32.50	29.00	38.75
Worry Mean	10.70	10.00	14.36
Emotionality Mean	15.00	13.22	16.36

Percentile Ranking of Target Population's TAI Scores Pre/Post-intervention

Student #	Total	%Rank	Worry	%Rank	Emotionality	%Rank
1	32/33	35/38	11/9	35/19	14/16	39/54*
** 2	27/23	19/04	08/08	10/10	14/10	39/10
** 3	28/23	22/04	09/08	19/10	13/10	30/10
4	22/26	02/16	08/09	10/19	10/12	10/26
** 5	59/56	93/91*	24/22	94/91*	25/24	94/93*
** 6	32/26	35/16	10/09	28/19	13/11	30/19
** 7	28/20	22/01	08/08	10/10	14/08	39/02
** 8	29/29	26/26	08/08	10/10	15/14	44/39
9	28/31	22/33	08/09	10/19	13/14	30/39
10	40/	*65/	13/	*53/	19/	*79/

*Scores below the 50th percentile
** Students showing post-intervention improvement

This researcher realizes, and the literature suggests, that dramatic changes with regard to personality trait anxiety are not to be expected. Therefore, even if the target population had scored similar to the problem documentation population at

pre-intervention, this author believes the TAI outcome objectives would still not have been reached.

Table III shows a reduction in TAI mean scores for total, worry and emotionality, also indicating some post-intervention anxiety-reduction improvement. This imparts some credibility for using the TAI to measure overall practicum effectiveness.

When reviewing the CTPE/ITPE scores of the STAI-S (Table IV), it was found that 20 percent of the target population achieved outcome objective improvement for PO-I, II, and III, while 50 percent achieved outcome objective improvement for PO-IV. This falls short of the 80 percent improvement expected on all four PO's.

TABLE IV

A CTPE/ITPE Comparison of STAI-S Percentile Ranking Scores for Firefighter Trainees

	Performance Evaluations			
Student #	PO-I % Rank	PO-II %Rank	PO-III % Rank	PO-IV %Rank
1	62/58**	49/42*	25/30	88/64**
2	70/78	58/75	42/22*	72/48***
3	54/42***	56/46***	31/25*	75/48***
4	12/19	12/22	19/17*	25/24*
5	93/49**	62/80	31/25*	64/36***
6	46/80	30/46	62/44***	17/09*
7	90/36***	22/22	47/39*	32/27*
8	70/68**	62/42***	75/46***	83/49***
9	22/75	49/53	64/36***	97/44***
10	22/75	53/72	--/--	--/--

* Scores showing ITPE improvement above the 50th percentile
** Scores showing ITPE improvement below the 50th percentile
*** Scores achieving outcome objective improvement

Table IV data also shows a significant increase in STAI-S ITPE scores for PO's I and II, indicating higher anxiety levels after intervention training. In addition, whereas 50 percent of the target population showed some overall improvemenmt on PO-I, only 30 percent showed overall improvement on PO-II further indicating the need to suspend the practicum implementation until after the state examination.

After the state examination, the STAI-S data indicates a reduction in CTPE scores for PO-III, suggesting a corresponding reduction in State anxiety. This was expected since the pressure to pass the state examination was no longer there. In addition, the data indicates some anxiety reduction ITPE improvement among 78 percent of the target population.

Looking at PO-IV, it is interesting to observe an increase in CTPE State anxiety scores, with some ITPE improvement among 100 percent of the target population. In this researcher's opinion, the increase in CTPE State anxiety scores might be due to academic burn-out. When this test was administered, the target population had undergone 16 weeks of intensive training. This includes four and one-half weeks of an accelerated Emergency Medical Technician course administered before the fire training program, not previously mentioned.

ASSC, (Table V) data indicates the number of signs/symptoms of autonomic nervous system arousal the target

population experienced before (CTPE) and after (ITPE) intervention. It was expected that only 20 percent of the target population would achieve outcome objective improvement for each of the four PO's. This data shows that 44 percent of the target population experienced ASSC outcome objective improvement for PO-I, while only 10 percent achieved outcome objective improvement for PO-II. Looking at PO-III and PO-IV, we see outcome objective achievement of 44 and 67 percent respectively. Therefore, the goal for outcome objective number three was achieved on PO's I, III and IV.

TABLE V

A CTPE/ITPE Comparison of ASSC Scores
for Firefighter Trainees

	Performance Evaluations			
Student #	PO-I CTPE/ITPE	PO-II CTPE/ITPE	PO-IV CTPE/ITPE	PO-IV CTPE/ITPE
1	3/3	3/4	3/2*	3/2*
2	0/0	4/4	1/1	1/1
3	1/0*	0/2	1/0*	1/1
4	3/2*	2/2	4/2*	4/2*
5	2/1*	2/1*	3/3	4/3*
6	1/1	3/4	2/2	2/0*
7	2/0*	0/0	0/0	3/0*
8	3/3	1/3	5/3*	5/3*
9	2/2	2/2	3/3	4/4
10	0/0	0/1	-/-	-/-

* Scores showing outcome objective ITPE improvement

Again, the lack of significant ITPE improvement for PO-II suggested increased anxiety about the upcoming state examination.

The results of the ASSC from this practicum project seem to be in conflict with a study cited from the literature which suggested little post-intervention change in autonomic nervous system arousal. This practicum shows significant changes.

The STAI-T data (Table VI) shows differences in State (worry) responses. It was expected that 80 percent of the target population would show ITPE outcome objective improvement on all four PO's.

TABLE VI

A CTPE/ITPE Comparison of STAI-T Percentile Ranking Scores for Firefighter Trainees

	Performance Evaluations			
Student #	PO-I %Rank	PO-II %Rank	PO-III % Rank	PO-IV %Rank
1	35/38	08/10	08/08	33/16*
2	38/33*	33/33	28/16*	33/08*
3	49/28*	38/28*	27/08*	33/22*
4	03/03	03/17	01/01	01/03
5	71/52**	54/60	35/16*	54/35***
6	35/01*	08/28	24/08*	01/00*
7	35/08*	10/08*	03/00*	00/00
8	38/33*	16/08*	28/22*	10/03*
9	44/44	33/28*	33/16*	76/33***
10	38/49	33/38	--/--	--/--

* Scores showing ITPE improvement above the 50th percentile
** Scores showing ITPE improvement below the 50th percentile
*** Scores achieving outcome objective improvement

The data indicates that 10 percent showed outcome objective improvement on PO-I, zero percent on PO-II and III and 20 percent showed outcome objective improvement on PO-IV. This data suggests that unrealistic goals were established for outcome

objective number five.

The STAI-T was chosen to measure State (worry) responses but it was designed to measure Trait (worry) responses. As was stated earlier, little change is usually expected with regard to Trait anxiety. Table VI shows few CTPE scores below the 50th percentile to begin with. Therefore, similar to the TAI, little outcome objective improvement could be measured.

It is interesting to report some ITPE improvement among 60 percent of the target population on PO-I, 40 percent on PO-II, and 78 percent on PO's III and IV, suggesting the STAI-T measuring tool might still be appropriate for measuring State anxiety (worry) responses.

Table VII shows CTPE/ITPE scores of the actual performance evaluations. Higher scores indicate better performance.

It was expected that 30 percent of the target population would achieve outcome objective improvement for each of the four PO's. This data indicates 30 percent achievement for PO-I, 60 percent achievement for PO-II, 33 percent achievement for PO-III and 56 percent achievement for PO-IV. The goal for outcome objective number four was achieved on all four PO's.

These results are significant, considering the surprising improvement in performance on PO-II among 60 percent of the target population. As previous data has indicated, PO-II has produced comparatively higher ITPE anxiety scores on the STAIS, ASSC and STAI-T.

TABLE VII

CTPE/ITPE Comparison of Actual Performance Evaluations for Firefighter Trainees

	Actual Performance Evaluations			
Student #	PO-I CTPE/ITPE	PO-II CTPE/ITPE	PO-III CTPE/ITPE	PO-IV CTPE/ITPE
1	5.0/7.0*	24.0/29.5*	38.0/40.0*	24.0/24.0
2	4.0/8.0*	14.5/16.0*	39.0/40.0	28.0/28.0
3	5.0/7.0*	19.0/29.0*	39.0/36.0	23.0/25.0*
4	7.0/8.0	15.0/24.0*	37.0/40.0*	23.0/27.0*
5	8.0/7.5	30.0/16.0	35.0/40.0*	24.0/26.0*
6	7.0/7.0	26.0/23 5	39.0/39.0	26.0/28.0*
7	8.0/8.0	36.5/32.0*	39.0/40.0	26.0/28.0*
8	8.0/8.0	24.0/28.0*	39.0/40.0	27.0/28.0
9	8.0/8.0	28.0/28.0	40.0/40.0	26.0/26.0
10	5.0/5.0	13.0/11.5	----/----	----/----

* Scores showing outcome objective ITPE improvement

This is thought to be due to the target population's fear about inadequate preparation and subsequent anticipation of failure on the state examination. As was shown earlier, the literature suggests an inverse relationship between anxiety and performance. As anxiety increases, performance decreases. This researcher also cited studies indicating the linear relationship between autonomic nervous system arousal and performance pointing out that the emotionality component may be used to facilitate performance. This is, apparently, what has occurred here.

When reviewing the results of the Audio Tape Evaluation (ATE), it was found that the entire target population thought the tapes were of high quality and pleasing to the ear. In general, 40 percent felt that the recordings helped them to

score better on the performance evaluations and 40 percent felt the recordings helped them to feel more confident and relaxed during the ITPE's. In addition, the same 40 percent felt that the recordings enhanced their learning of the PO's.

It is interesting to report that 100 percent of the target population felt that this manner of presenting information would be benificial in other learning situations, while only 10 percent felt that listening to these recordings interfered with their other studies.

It is concluded that this practicum produced measurable positive anxiety reduction effects with significant improvements in performance. Even though live sessions were not conducted, the medium chosen to administer the practicum was effective in producing these positive changes among the target population.

CHAPTER V

Recommendations

Many educators today are realizing, and research is documenting, the need for more "right-brain" teaching strategies within a variety of educational settings. Although the target population did not demonstrate the results anticipated, measurable changes were achieved.

The design of this practicum seems to have hindered the target population during the time when the intervention training should have helped them the most. Perhaps more dramatic results might have been achieved by allowing the target population to physically practice the PO's while listening to the anxiety reduction tapes. One conclusion, drawn by this researcher, seems to indicate that this type of intervention works best in conjunction with conventional training practices. These audio training tapes will be offered to all future fire training classes upon request.

In the area of actual performance, this practicum indicated significant improvements. This author believes these improvements were due to the mental imagery section of the intervention training. During actual fireground operations, appropriate action under hazardous conditions is imperative for each firefighter. Firefighters may go several weeks or months without a fire and sometimes forget to perform or remember

important things. Therefore, teaching firefighters how to mentally rehearse their duties on the way to a fire, could improve their performance during actual firefighting operations. Teaching strategies that concentrate on mental imagery can be easily incorporated into conventional fire training programs.

Every fire department in the country offers periodic promotional examinations. Candidates are usually given a list of manuals and other reading materials from which the test questions will be taken. After the examination announcement, candidates are usually given a few months for self-directed study to prepare for the examination. Starting the preparation process at this time is the equivalent of cramming for the examination.

In this setting, non-copyrighted material reproduced on cassette tapes would bring the sense of hearing into the memory arena. It is known that repetition helps one to remember better and that listening to the tapes again and again helps to learn information in a short period of time.

This writer has used this approach on himself with positive results and has recently tried this approach with volunteers. Preliminary results indicated that 60 percent of the volunteers who used the tapes scored high enough on the test to be promoted. In addition, of the 11 individuals who will be promoted, 40 percent used the audio tapes prepared by this writer. Approximately 60 individuals completed the

promotional examination. Verbal feedback indicates that the tapes did help make the volunteers feel more confident and relaxed in the examination setting.

In a setting somewhat unrelated to education and learning, the implications of this type of intervention are well established. During the last decade, numerous scientific investigations have supported the approach that mental images can help produce rapid and extensive emotional, psychological and physiological changes. Research is strongly suggesting that the ability to produce imagery is a powerful agent in the healing process.

Patients with cancer, for example, are taught deep-relaxation exercises after which they "visualize" three times a day. In their visualization, they see their cancer and then imagine an army of healthy white blood cells swarming over it to carry off the malignant cells. The white cells flush out the malignant cells and the patient then sees himself as healthyy, with an immunological system that is working perfectly. Since the subconscious mind cannot differentiate between what is fantasy and what is reality, the mental pictures can be so powerful that they can prod the body's immune system into destroying the cancer. The visualization dialogue can be adapted to address any type of health problem. After a preliminary inquiry, this writer has identified a serious health problem which he believes affects a significant number of fellow

firefighters within his fire department.

Numerous cases of low back pain, injury and debilitation have been reported within the last few years. This is not surprising considering the task requirements of the fire/rescue profession. Individuals in this profession are required to lift heavy objects up and down ladders and when riding rescue, it is not uncommon to be required to lift and carry patients weighting 250 to 350 pounds. Keeping certain muscle groups in proper condition and applying proper body mechanics to all lifting operations is imperative for the maintenance of a healthy back.

It is well-established that low back pain is a chronic condition caused by weak/tight muscles, stress and improper body mechanics and lifting techniques. A healthy back educational program which emphasizes a multidisciplinary approach including visualization techniques would, in this researchers opinion, make a significant contribution in reducing the health insurance claims of firefighters.

After gaining experience writing a comprehensive proposal for the implementation of this practicum, this author will write a similar proposal for the implementation of a Healthy Back Program to be submitted to the fire department administration. Employee interest in such a program has been established. The proposal will address such issues as necessity, feasibility,

time factors, curriculum and the professional qualifications required for the training instructor. The writing of this proposal will commence the first week in November, 1990 and will be completed by the first week in February, 1991. During this time, the writer will approach the administration with the idea in an effort to gain interest and support for the program. The goal date for beginning the Healthy Back Program will be April, 1991.

This researcher's prior educational experience qualifies him to conduct such a program and hopes that this type of progressive educational thinking will be the impetus necessary to make significant positive changes and contributions to the fire department for many years to come.

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APPENDIX A

BACKGROUND INFORMATION QUESTIONNAIRE

QUESTIONNAIRE #_____ DATE_____

AGE _____ DATE OF BIRTH _____ SEX _____

MARRIED: YES _____ NO _____ SEPARATED _____ DIVORCED _____

CHILDREN: YES _____ NO _____ HOW MANY LIVE WITH YOU _____

PARENTS LIVING WITHIN 50 MILES: NONE _____ ONE _____ BOTH _____

IN-LAWS LIVING WITHIN 50 MILES: NONE _____ ONE _____ BOTH _____

EDUCATION: H.S._____ ASSOCIATES'S _____ BACHELOR'S _____
MASTER'S _____ DOCTORATE _____ GPA _____

MILITARY: ARMY _____ NAVY _____ AIR FORCE _____ MARINES _____
NUMBER OF ACTIVE DUTY YEARS _____ DISCHARGE _____
JOB CLASSIFICATION _____

MECHANICAL SKILLS _____

HOBBIES _____

HAVE YOU EVER HAD SEAMANSHIP TRAINING? YES _____ NO _____

HAVE YOU EVER WORKED CONSTRUCTION? YES _____ NO _____

NUMBER OF MILES FROM HOME TO FIRE SCHOOL SITE _____

PRIOR TO FIRE SCHOOL, ARE/WERE YOU FAMILIAR WITH ROPES AND KNOTS?
YES _____ NO _____ WHICH KNOTS? _____

PRIOR TO FIRE TRAINING, ARE/WERE YOU A CERTIFIED SCUBA DIVER?
YES _____ NO _____

PRIOR TO FIRE SCHOOL, DID YOU EXERCISE ON A REGULAR BASIS? YES ___ NO ___
WHAT TYPE? _____ HOW MUCH? _____

ARE YOU CURRENTLY FIGHTING A COLD OR THE FLUE? YES _____ NO _____

ARE YOU CURRENTLY SUFFERING FROM BACK PAIN, KNEE PROBLEMS, OR TENDONITIS THAT MAY AFFECT YOUR PERFORMANCE ON THE PERFORMANCE EVALUATIONS?
YES _____ NO _____

APPENDIX B

TEST ATTITUDE INVENTORY

Developed by Charles D. Spielberger

in collaboration with

H.P. Gonzalez, C.J. Taylor, G.R. Ross and W.D. Anton

NAME_____ DATE_____ SEX M F

T_____ W_____ E_____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
1. I feel confident and relaxed while taking tests	①	②	③	④
2. While taking examinations I have an uneasy, upset feeling	①	②	③	④
3. Thinking about my grade in a course interferes with my work on tests	①	②	③	④
4. I freeze up on important exams	①	②	③	④
5. During exams I find myself thinking about whether I'll ever get through school	①	②	③	④
6. The harder I work at taking a test, the more confused I get	①	②	③	④
7. Thoughts of doing poorly interfere with my concentration on tests	①	②	③	④
8. I feel very jittery when taking an important test	①	②	③	④
9. Even when I'm well prepared for a test, I feel very nervous about it	①	②	③	④
10. I start feeling very uneasy just before getting a test paper back	①	②	③	④
11. During tests I feel very tense	①	②	③	④
12. I wish examinations did not bother me so much	①	②	③	④
13. During important tests I am so tense that my stomach gets upset	①	②	③	④
14. I seem to defeat myself while working on important tests	①	②	③	④
15. I feel very panicky when I take an important test	①	②	③	④
16. I worry a great deal before taking an important examination	①	②	③	④
17. During tests I find myself thinking about the consequences of failing	①	②	③	④
18. I feel my heart beating very fast during important tests	①	②	③	④
19. After an exam is over I try to stop worrying about it, but I just can't	①	②	③	④
20. During examinations I get so nervous that I forget facts I really know	①	②	③	④

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APPENDIX C

SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger
in collaboration with
R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs

STAI Form Y-1

Name _____ Date _____ S ____

Age _____ Sex: M ____ F ____ T ____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

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APPENDIX D

ANXIETY SIGNS AND SYMPTOMS CHECKLIST (ASSC) *

DIRECTIONS: Check only the signs and symptoms you are experiencing right now at this moment. Please be realistic and honest. There are no right or wrong answers.

MUSCULO-SKELETAL SIGNS:

_____ My fingers and hands are shaking.

_____ I can't sit or stand still.

_____ My mouth or eye is twitching.

_____ I have a headache.

_____ I studder or stammer when I speak.

_____ My neck is stiff.

_____ My speech is rapid.

_____ My back "kind of hurts".

_____ I am experiencing ringing in my ears.

_____ I yawn often.

_____ I feel butterflys in my stomach.

_____ My hands are moist.

_____ My mouth is dry

_____ I feel faint.

_____ I have cold chills.

PHYSIOLOGICAL SIGNS AND SYMPTOMS:

_____ My stomach is upset.

_____ I feel my heart pounding.

_____ I am sweating.

_____ My face is hot and flushed.

_____ My fingers and toes are cold.

* Adapted from: "What Are Your Signs of Stress and Distress" Everly and Girdano (1980).

APPENDIX E

PERFORMANCE OBJECTIVE I, RESCUE BOWLINE

Given the proper size and amount of rope, the fire-fighter shall demonstrate tying the rescue bowline. The rescue bowline must be completed in two (2) minutes. All knots must be tied with gloves on and in full protective clothing.

PERFORMANCE GUIDE:
Knot must be complete and tied correctly.

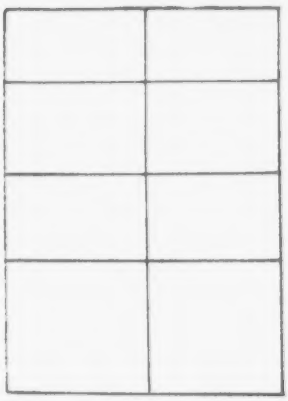
1. Leg loops being proper size and in proper position.

2. The bowline on the chest must be tight enough and centered on the chest. Proper amount of rope left for attaching a tether line.

3. Time limit 2:00 no deductions - 1 point deduction for each 10 seconds over 2 minutes.

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot perform

Maximum Standard 8
Min. Stand. to Pass 6



APPENDIX E - continued

PERFORMANCE OBJECTIVE II, PROTECTIVE BREATHING EQUIPMENT

Given a pressure-demand type self-contained breathing apparatus while wearing a full set of protective clothing, the firefighter shall demonstrate donning the breathing apparatus. The apparatus must be on and in use within 45 seconds, including donning gloves.

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot perform

Maximum Standard 32
Min. Stand. to Pass 23

1. Demonstrate the correct procedure for daily inspection and maintenance.

TIME LIMIT BEGINS

2. Firefighter will open tank valve and don the breathing apparatus either the coat method, or the overhead method.
3. Connect and adjust all harness straps, buckles and snaps.
4. don the facepiece and adjust for proper fit.
5. Check facepiece seal by covering end of breathing tube and attempting to inhale.
6. Put on helmet and secure helmet strap under chin with shiled and ear protection down.
7. Connect breathing tube to regulator and open regulator main line valve.
8. Put on gloves.
9. A ½ point deduction will be made for each second over the 45 second time.

APPENDIX E - continued

PERFORMANCE OBJECTIVE III, TOOLS AND EQUIPMENT (NOZZLES)

Given a standard fire department pumper, the firefighter shall identify the use of hose adaptors and hose appliances carried on the pumper.

Maximum time for each students -- 10 minutes

4 No errors
3 One error
2 Two errors
1 Two or more errors
0 Cannot perform

Maximum Standard 40
Min.Stan. to Pass 28

PERFORMANCE GUIDE:

1. Identify and demonstrate nozzles.
2. Identify and state use of a siamese.
3. Identify and state the use of a wye.
4. Identify and state the use of a hose jacket.
5. Identify and state the use of a hose clamp.
6. Identify and state the use of different kinds of hose.
7. Identify and state the use of a deluge set.
8. Identify and state the use of a hose roller. (Also known as a hose hoist tool)
9. Identify and state the use of a spanner wrench and hydrant wrench.
10. Idenfity and state the use of a 4-way valve.

APPENDIX E - continued

PERFORMANCE OBJECTIVE IV - HOSE

Given a single section of 2½ house, the fire-fighter will demonstrate the following:

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot Perform

Maximum Standard 28
Min. Stan. to Pass 17

1. Accordion shoulder carry	
2. Self-locking hose roll	
3. A. Coupling B. Knee Press C. Over the hip method	
4. Donut roll	
5. Twin donut roll	
6. Single section drain and carry	
7. Street Drag	

APPENDIX E - continued

PERFORMANCE OBJECTIVES V, LADDERS/EXTENSION

Given a 24' extension ladder placed on the fire truck approximately 25' from building to be laddered, the trainee shall demonstrate the proper procedure for removing and carrying the ladder to the designated site. The trainee will then demonstrate the proper procedure for raising and completely extending the ladder. Maximum time limit: Three (3) minutes in full protective clothing with SCBA on.

4 No errors
3 One error
2 Two errors
1 More than two errors
0 Cannot perform

Maximum Standard 32
Min. Stand. to Pass 22

1. Remove and place roof ladder in a safe place. Find balance point on the 24' extension and remove from unit.

2. Walk toward building lowering the butt and slightly place ladder flat on ground with both sections down, and heel against building.

3. Face away from building, grasp the 2nd rung from top, pivot under ladder and raise hand over hand against building.

4. While standing on side of ladder, using the elbow against hip technique as a fulcrum, bring ladder out from building (proper distance).

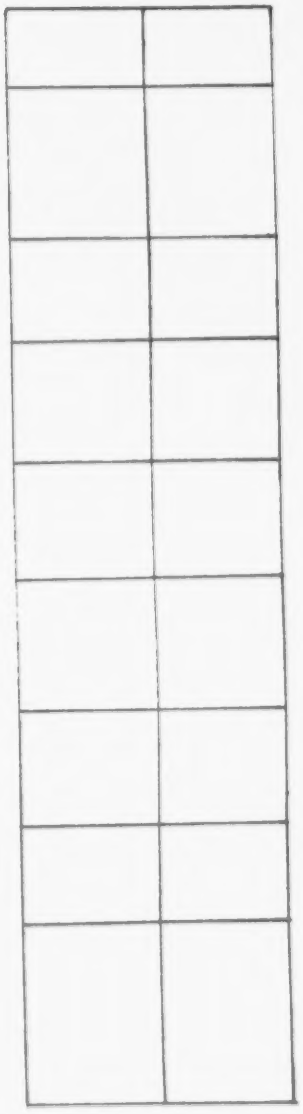
5. Place one foot at the heel of one beam, and with the insept, knee and leg, steady the ladder by the beam.

6. Watch the top of ladder for balance obstruction and hazards, grasp the halyard and extend the fly section with hand over hand motion to proper elevation.

7. Make sure ladder locks are in place, and gently allow fly section to make contact with building.

8. Plumb and set ladder (approximately 75° angle) and secure halyard with a clove hitch and half hitch.

9. A one point deduction will be made for each 3 seconds over 3 minutes.



APPENDIX F

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name _____ Date _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I feel nervous and restless	①	②	③	④
23. I feel satisfied with myself	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I feel like a failure	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I have disturbing thoughts	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I make decisions easily	①	②	③	④
35. I feel inadequate	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	①	②	③	④

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APPENDIX G

RELAXATION DIALOGUE

INSTRUCTIONS AND RATIONALE:

Relaxation is an important tool, used to combat the stress response when exercise is not practical. Relaxation brings you down from an aroused state and allows you to recover completely from a stressful event or "stressor." The exercises that follow have been found to be effective in reducing test anxiety.

The audio recordings given to you contain instructions for several exercises. You are responsible for listening to these tapes as often as you can during the time frame given you. From the beginning, these exercises will increase your awareness of both your mind and body, improve your concentration abilities, help you to perform in stressful situations and relax you in such a manner as to enable you to achieve your optimal stress level for each performance evaluation.

While you are involved in any of the relaxation exercises, your conscious mind is becoming quiet while your subconscious mind is awakening. This is what you want to do. The more you can awaken your subconscious, the more things you will be able to accomplish. The subconscious is like a computer. It cannot distinguish between what is imagined and what is real. It stores everything put into it and knows how to get the best out of what is in there. The only way for you to do this is to free your subconscious by relaxing your conscious mind.

When you listen to these tapes in a relaxed state, you are

programming your subconscious mind. Whatever you say to yourself will be remembered. With repetition you will get better at it. Soon, everthing will happen as if automatic, without conscious intervention on your part. It is at this time that you have achieved a great amount of self-control.

The relaxation exercises which follow are best performed in a quiet, dim room where you can lie down on a blanket or rug on the floor and not be disturbed for at least 30 minutes. These exercises may be performed while sitting in a chair. It is very beneficial to listen to these tapes as you are falling asleep each night. If you are driving a motor vehicle at this moment while listening to this tape, please fast forward for approximately seconds. The beginning of this tape prepares you for relaxation and is not appropriate when driving a motor vehicle. For the purposes of this research study, please follow the directions of your instructor and listen only to the tapes given to you and only during the times alloted to you. It is also very important that you do NOT physically practice the same performance objective that you are listening to on tape during the time alotted to you.

Bend your knees and move your feet close to your buttocks spacing them about 15 to 20 inches apart to allow your knees to touch each other, toes turned slightly inward. Make sure your spine is straight and flat. You may want to take off your shoes and loosen your clothing. Close your eyes. Place one hand on your abdomen and one hand on your chest. Now, prepare to enter a state of deep relaxation.

BREATH AWARENESS:

"Start to breathe deeply, filling your lungs with air. Inhale slowly and deeply through your nose and mouth into your abdomen to push up your hand as much as feels comfortable. Your chest should move only a little and only with your abdomen. Exhale slowly and deeply also. Continue breathing in this manner. If you begin to feel ligfhtheaded, that is all right. It means you are starting to relax. . . . . Give your entire body a chance to relax. . . Feel the comfort and the heaviness. . . . Again, breathe in deeply filling your lungs with air, hold your breath. . . Notice the tension. . . Now exhale noticing the tension draining from your body as the air rushes out. . . As your chest relaxes, your breathing becomes much easier. . . Breathe deeply into your stomach pushing up your hand. Hold. . . And relax, feeling the contrast between tension and relaxation as the air rushes out. . . As your chest and stomach begin to relax, so must you allow them to do so. . . Let all the muscles in your chest and stomach relax. . . Concentrate on the good feeling as the tension leaves your body. . . Keep breathing deeply, and with your eyes still closed, roll your eyeballs up into to the top of your head. . . Try to look at the back of your head. . . Hold them there for two breaths, keeping your eyelids closed. . . .Then as you exhale the second breath, let your eyeballs fall into their normal position. You will now feel very relaxed. . . Continue breathing, inhale deeply and exhale completely. . . Now, each time you breathe out, imagine all the tension flowing out of your body. . . With each breath, you become more and more relaxed. . . Your arms and legs begin to feel heavy and warm as

you relax even more. . . With each breath, the tension flows from your body and you are achieving deeper relaxation. . . As you relax, notice the tingling sensation that comes over your body. . . Enjoy the good feeling of relaxing and letting go. . . As you relax more, your body gets heavier and warmer. Enjoy this feeling, secure in the knowledge that you have brought it about. . . You are in control of your body."

PROGRESSIVE MUSCLE RELAXATION:

"Now, take a deep, slow breath. Hold the breath for several seconds. . . Slowly exhale. . . Take another deep, slow breath. Hold your breath and pull your toes toward your head, tightening your leg and calf muscles. Feel the tension. . . Breathe out and let go completely. . . Enjoy the feeling of warmth and letting go as all the tension flows from your leg and calf muscles. . . Take another deep, slow breath. Hold your breath and make a fist with both hands, tightening your arms, back, shoulder and neck muscles. . . Feel the tension. . . Breathe out and let go completely. . . Feel the waves of warm relaxation flow through your body. . . Take another deep, slow, breath. Hold the breath and tighten every muscle in your body. . . Hold onto and study the tension. . . Now breathe out and let go completely. . . Really notice the contrast between tension and relaxation. . . Take another deep, slow breath. Hold the breath and again tighten every muscle in your body. Hold the tension. . . Now breathe out and let go, relaxaing completely. . . Feel yourself sinking deeper and deeper into the surface you are lying on. . . As you sink deeper and deeper, you

relax more and more. . . Feel the tingle and the warmth in all your muscles as they relax deeper and deeper. . . Just lie there for a minute. . . Enjoy the feeling of deep relaxation that has come over your entire body. . . Think of nothing else. . . You say to yourself, "I withdraw my thoughts from my surroundings." . . "My thoughts are all turned inward." . . "I am at ease, completely at ease." . . . "Deep within my mind I can visualize and experience myself as relaxed.". . . "Deep within my mind I can visualize and experience myself as comfortable and still.". . . "My mind is calm and quiet.". . . "I feel at peace with myself.". . . "I feel a new sense of well-being.". . . "I am breathing more and more deeply.". . . "I am now relaxed and alert."

POSITIVE AFFIRMATIONS: Cognitive Behavior Modification.

Now, picture yourself having just finished this performance evaluation. . . Everything went just as you expected. . . Say to yourself, "I am completely satisfied with my performance.". . . "My performance was perfect.". . . "I am grateful to myself for adequatly preparing to perform at my best.". . . Relive this moment over in your mind. . . Enjoy all the sensations that are associated with it; the sights, sounds, smells, feelings, physical touching, everything. . . Just enjoy it thouroughly. . . At this moment, you are the best. . . Congratulations to you for a job well-done.

RETURN TO THE CONSCIOUS:

At your own pace now, bring yourself out of the state of deep

relaxation. . . Start to bring your awareness levels up. . . Begin to wiggle your fingers and toes. . . Take some deep breaths. . . Whenever you are ready, sit up. . . Tell yourself, "I am relaxed, refreshed and full of energy." Stretch out and be ready to face the rest of the day with a positive attitude. REMEMBER: You are in control. . . You alone are responsible for what happens in your life. . . Go out and make each day a great one. . . Make each venture a successful one. . . Enjoy yourself, and be at peace with yourself and the world around you.

APPENDIX H

IMAGERY DIALOGUE

PERFORMANCE OBJECTIVE I
RESCUE BOWLINE

Now in your glow of deep, yet attentive relaxation, I want you to create a scene in your mind's eye . . . a pleasant scene of colors and sounds . . . picture yourself during fire training . . . picture all the sights, sounds, smells, people and everything that will make this scene real and vivid to you . . . a performance evaluation session is about to begin.

Picture yourself wearing a full set of protective clothing . . . boots, pants, bunker coat, gloves, helmet and SCBA . . . you are outside . . . it's a beautiful day with a cool, gentle breeze blowing . . . the sky is a deep blue with fleecy clouds drifting gently by . . . at your feet you see a fellow trainee posing as a victim . . . you are comfortable with his presence . . . you sense excitement in the air . . . but you are cool and calm . . . nearby you see your evaluator is almost ready . . . you are secure in the knowlege that you are well prepared for the tasks you are about to perform . . . for you are about to be evaluated on your ability to tie the rescue bowline upon a victim while both of you are wearing full protective clothing, including gloves . . . Say to yourself, two minutes is plenty of time . . . I have tied this knot many times in one minute 30 seconds . . . I feel calm . . . I feel relaxed . . . I feel a confident smile spread across my face . . . I feel satisfied that I have mastered this performance objective . . . I feel secure in the knowledge that I know exactly what I have to do . . . I feel secure in the knowledge that I know

exactly when and how to do it . . . There is absolutely nothing to worry about . . . my evaluator is ready . . . I feel very self-confident . . . I am steady . . . I am ready . . . the time is now . . . I begin by picking up the rope and form a bight about eight feet in length . . . stay organized . . . take it step by step . . . my body is flowing swiftly and smoothly . . . considering the loop end of the bight as the standing part, I tie an overhand knot to form a loop approximately three feet long, so that the loop hangs downward through the overhand knot . . . it feels like a star has burst inside me sending warmth and energy from the tips of my fingers to my toes . . . a confident smile again touches my face as I continue to flow swiftly through this task . . . I see the knot in my hand . . . holding the overhand knot in the left hand, I reach down with the right hand and bring the three foot loop up and over the knot under the thumb of the left hand, to be held secure . . . this is a piece of cake. . . I grasp the two sides of the loop where they go . . . through the overhand knot and pull upward to form a bight, thus creating the double leg loops . . . so far everything is perfect . . . this is easy . . . I'm well ahead of time . . . I step through the double leg loops and pull up to tighten the bight and adjust the two loops so that they are even . . . keep going . . . my whole body is energized . . . I think of nothing else except this task . . . I rapidly slip the two leg loops over the victims legs and draw them well up in the crotch . . . the leg loops are the proper size and in the proper position . . . my mind is completely centered on this task . . . I'm still well ahead of time . . . I'm halfway finished . . . I place a half hitch around the victim's chest, just under the crotch of the armpits

and center in the middle of the victim's chest . . . I allow no distractions . . .I seem to be moving so swiftly that everything is in slow motion . . . I secure the half hitch in front with an overhand safety to form a loop which is tucked properly through the half hitch. . . my concentration is steady . . . everything is running smoothly . . . I feel secure . . . I am almost finished . . . I place the running part of the line through the loop what was just formed and pull up on the standing part to secure the tie. . . I feel elation . . . I have done it . . . the rescue bowline on the victim's chest is secure and tight . . . a confident smile again emerges on my face . . . I check to see that the bowline on the victim's chest is centered with the proper amount of rope left on the running part for attaching a tether line . . . THERE, I'M FINISHED . . . I'm well ahead of two minutes.

Now, I imagine myself performing this evaluation again . . . I begin by picking up the rope and form a bight about eight feet in length . . . I tie an overhand knot in the bight to form a loop about three feet long, so that the loop hangs downward through the overhand knot . . . holding the overhand knot in the left hand, I reach down with the right hand and bring the three foot loop up and over the knot under the thumb of the left hand, to be held secure . . . I grasp the two sides of the loop where they go through the overhand knot and pull upward to form a bight, thus creating the double leg loops . . . I step through the double leg loops and pull up to tighten the bight and adjust the two loops so that they are even . . . I rapidly slip the two leg loops over the victims legs and draw them well up in the crotch . . . they are the proper size and in the

proper position . . . I place a half hitch around the victim's chest, just under the crotch of the armpits and center in the middle of the victim's chest . . . I secure the half-hitch in front with an overhand safety to form a loop which is tucked properly through the half-hitch . . . I place the running part of the line through the loop that was just formed and pull up on the standing part to secure the tie . . . the rescue bowline on the victim's chest is secure, tight and centered with the proper amount of rope left on the running part for attaching a tether line . . . there, I'm FINISHED!

APPENDIX I

IMAGERY DIALOGUE
PERFORMANCE OBJECTIVE II
SELF-CONTAINED BREATHING APPARATUS

Now in your glow of deep, yet attentive relaxation, I want you to create a scene in your mind's eye . . . a pleasant scene of colors and sounds . . . picture yourself and your fellow firefighter trainees preparing the fire training grounds for your performance evaluations . . . picture all the sights, sounds, smells, people and everything that will make this scene real and vivid to you . . . a performance evaluation session is about to begin . . .

Now, picture yourself wearing a full set of protective clothing . . . boots, pants, bunker coat, everything except your gloves and helmet . . . they are laying beside your S.C.B.A. which is positioned on the ground in front of you . . . see yourself about to be evaluated on your ability to don your S.C.B.A. within 45 seconds including your gloves and helmet . . . say to yourself, I feel calm . . . I feel relaxed . . . I feel satisfied that I have mastered this performance objective . . . I feel secure in the knowledge that I know exactly what I have to do . . . I feel secure in the knowledge that I know exactly when and how to do it . . . there is absolutely nothing to worry about . . . I feel a confident smile spread across my face . . . my evaluator is almost ready . . . I know I can do this perfectly . . . it will be very easy once I get started . . . I feel steady . . . my evaluator is ready . . . I am ready . . . the time is now . . . extra warmth and energy races through my body as I begin by demonstrating

the correct procedure for daily inspection and maintenance of my S.C.B.A. . . . stay organized . . . I explain about checking for broken straps . . . I explain and demonstrate how to check the breathing tube for cracks . . . take it step by step . . . don't rush . . . I explain and demonstrate how to remove the breathing tube from the mask and check for the rubber valve disk and pinwheel . . . I can do this . . . I'm doing it now . . . I explain and demonstrate how to check the high pressure hose and regulator assembly . . . I look for frayed straps on the backpack assembly . . . I inspect the cylinder for signs of wear . . . I omit nothing . . . I perform perfectly . . . my evaluator says, "get ready to don your S.C.B.A." . . . everything is ready . . . I've succeeded with this many times before in my mind . . . I feel very self-confident . . . I will tune all of my concentration to this task . . . now, I imagine myself swallowing a star and, as it bursts inside me, it spreads warmth and energy from the tips of my fingers to my toes . . . my evaluator says, "whenever you are ready." . . . I begin with a burst of energy opening the tank valve all the way and don the S.C.B.A. with either the coat or the overhead method . . . take it step by step . . . I feel my body moving swiftly and smoothly . . . I feel myself connecting and adjusting all harness straps, buckles and snaps . . . I am well ahead of time . . . I feel my body creating currents of air as I move very swiftly . . . I don't fumble . . . every movement has been carefully choreographed into this task . . . I don the facepiece remembering to place my chin in first and to pull the straps tight starting from the chin and working up to the top of my head . . . this is easy . . . I'm halfway through . . . I check my facepiece seal by

covering the end of my breathing tube with my hand and attempt to inhale . . . extra energy is racing through my body . . . I think of nothing else except what is left to do . . . I put the end of my breathing tube through the chinstrap of my helmet as I put on my helmet pulling my chinstrap tightly under my chin with shield and ear proteciton down and collar up . . . almost finished . . . there is still 20 seconds left . . . I'm well ahead of time . . . I connect the breathing tube to the regulator and open the regulator main-line valve all the way . . . keep going . . . I put on my gloves . . . there, finished . . .

Now, I imagine myself performing this performance evaluation again . . . I picture all the sights, sounds, smells, people, everything . . . only this time, I move even faster . . . I explain and demonstrate the correct procedure for daily inspection and maintenance of my S.C.B.A. . . I explain about checking for broken straps . . . I explain about checking the breathing tube for cracks . . . I explain about removing the breathing tube from the facemask and checking for the rubber valve disk and pinwheel . . . I demonstrate checking the high pressure hose and regulator assembly . . . I look for frayed straps on the backpack . . . and I inspect the cylinder for wear . . . I begin donning the S.C.B.A. by opening the tank valve all the way and use either the coat or overhead method . . . I feel myself connect and adjust all harness straps, buckles and snaps . . . I don the facepiece remembering to place my chin in first and to pull the straps tight starting from the chin and working up to the top of my head . . . I check my facepiece seal . . . I put my breathing tube through my chinstrap of the helmet as I put on my helmet pulling my

chinstrap tight with shield and ear flaps down and collar up . . . I connect the breathing tube to the regulator and open the main line valve all the way . . . I put on my gloves . . . there, FINISHED.

APPENDIX J

IMAGERY DIALOGUE
PERFORMANCE OBJECTIVE III.
TOOLS AND EQUIPMENT (NOZZLES).

Now in your glow of deep, yet attentive relaxation, I want you to create a scene in your mind's eye . . . a pleasant scene of colors and sounds . . . picture yourself and your fellow firefighter trainees preparing the fire training grounds for your performance evaluations . . . picture all the sights, sounds, smells, people and everything that will make this scene real and vivid to you . . . a performance evaluation session is about to begin and it is very important that you pass it . . .

Now picture yourself standing before your instructor . . . look around you . . . notice there is an array of tools and equipment spread out in front of you . . . you have seen this equipment before . . . you sense an atmosphere of excitement and enthusiasm . . . but you are cool and calm . . . for you are about to be evaluated on your ability to identify and state the use of the hose adaptors, tools and hose appliances carried on a standard fire department pumper . . . you say to yourself, I feel calm . . . I feel relaxed . . . I feel a confident smile spread across my face . . . I feel completely satisfied that I have mastered this performance objective for I have practiced it many times in my mind . . . I feel secure in the knowledge that I know exactly what I have to do . . . I feel secure in the knowledge that I know exactly when and how to do it . . . there is absolutely nothing to worry about . . . I will only allow task-oriented thoughts to enter my mind . . . my evaluator is almost ready . . . I feel

very self-confident . . . I am steady . . . I am ready . . . my evaluator is ready . . . it is time . . . warm energy surges to my brain and allows my memory to become keen and alert . . . I have total recall and identify the solid stram nozzle, stating that it is designed to produce a compact stream with little shower or spray . . . it has good reach and penetration to areas that might not be reached by other mediums . . . the nozzle pressure of a solid stream handline is 50 psi . . . I perform perfectly . . . I identify the fog stream nozzle and state that it is designed to produce a patterned stream composed of droplets . . . a straight stream is one pattern of the adjustable fog stream nozzle . . . fog stream nozzles are designed to deliver water in small droplets which facilitates maximum heat absorption by completely turning to steam . . . handheld fog stream nozzles work best with a nozzle pressure of 100 psi . . . a broken stream may be a solid stream that has been broken in coarsely divided drops . . . I identify the rotary distributor nozzle as producing droplets larger than those of a fog stream and state that it has great penetration . . . I state that the cellar nozzle is an example of a broken stream nozzle . . . I identify the master stream deluge nozzle and state that it is used for any fire stream too large to be controlled without mechanical aid . . . I state that safety precautions such as tying off should be employed and that a master stream may be either solid or fog and is produced by using special nozzles, paralleled hoselines and large-capacity pumps . . . master stream devices are heavy and are used from fixed positins . . . I identify the special purpose nozzles and state their uses . . . I identify the foam nozzles eductor and state that it is used to float foam

over burning flammable liquids, smothering the fire out, and for cooling hot objects in and near flammable liquids . . . I identify the piercing nozzle used for piercing concrete walls and other such substances . . . I identify the partition nozzle used to fight fires within partitions . . . I am able to identify any nozzle on this evaluation . . . I am very confident . . . I am doing very well . . . I identify the siamese and state that it is a hose appliance used to bring two or more hoselines into one hoseline or device . . . it has two female connections and one male connection . . . two and one-half inch and larger siamese applicances usually have clapper valves which allow the charging of a first hoseline, before a second one is connected . . . I identify and state the use of a wye appliance as used to divide a line of hose into two or more hoselines . . . I state that wyes are often gated so that water being fed into the hoselines may be controlled at the gate . . . I identify and state that the use of a hose jacket is to seal small cuts or breaks and to connect and seal mismated or damaged couplings of the same size . . . the hose jacket is considered a hose tool rather than an appliance because water does not actually pass through it . . . I identify and state that the hose clamp is a tool used to shut off water in a hoseline when no other means is available . . . the hose clamp is also used to enable the hydrant man to open the fire hydrant but keep back water until the pumper is ready for it . . . I identify the booster hoseline and state that it is usually one inch in diameter, rubber covered, rubber lined and fabric reinforced used for fighting small fires, less than 40 gpm . . . it has a special coupling with recessed lugs called a Bar-wey coupling . . . I identify the one and

onehalf inch double woven-jacketed rubber-lined hose with inch and one-half couplings which have capacities ranging from 40 to 125 gpm . . . I identify the inch and three-quarter, the two and one-half inch and the three inch double woven-jacketed rubber-lined hose for capacities in excess of 125 gpm . . . I identify the six inch woven-jacketed, or plastic covered, rubber-lined synthetic intake or supply hose and the six-inch rubber-covered hard sleeve intake hose . . . I identify and state the use of a hose roller (also known as a hose hoist tool) . . . it is used to protect hose from sharp edges while it is being raised or lowered . . . I identify and state the use of a spanner wrench which is used to tighten or loosen hose couplings, close to utility cocks and pry or hammer . . . the hydrant wrench is identified and is used to open hydrants . . . I identify and state the use of a 4-way valve as a means of changing from a direct hydrant supply line to a supply line which is supplied by a pumper without interrupting the flow of water . . . I identify an in-line gate valve and state that it is a water flow control device used to control the flow of water from the hydrant . . . there, I'm FINISHED!

APPENDIX K

IMAGERY DIALOGUE
PERFORMANCE OBJECTIVE IV
HOSE ROLLS AND CARRIES

Now in your glow of deep, yet attentive relaxation, I want you to create a scene in your mind's eye . . . a pleasant scene of colors and sounds . . . picture yourself and your fellow firefighter trainees preparing the fire training grounds for your performance evaluations . . . picture all the sights, sounds, smells, people and everything that will make this scene real and vivid to you . . . a performance evaluation session is about to begin and it is very important that you pass it . . .

Now picture yourself standing before your evaluator . . . look around you . . . you see several sections of various size hose stretched out on the ground . . . you sense an atmosphere of excitement and enthusiasm . . . but you are cool and calm . . . for you are about to be evaluated on your ability to demonstrate the various hose rolls and carries that are used in the fire service . . . say to yourself . . . I feel calm . . . I feel relaxed . . . I feel a confident smile spread across my face for I am completely satisfied that I have mastered this performance objective . . . I have practiced it many times before in my mind . . . I feel secure in the knowledge that I know exactly what I have to do . . . I feel secure in the knowledge that I know exactly when and how to do it . . . there is absolutely nothing to worry about . . . I feel very self-confident my evaluator is almost ready . . . I am steady . . . I am ready . . . my evaluator is ready . . . my evaluator requests me to demonstrate the

accordion shoulder carry . . . I begin by carrying one coupling of a stretched section of fire hose toward the other until approximately the middle of the section is reached . . . I pick up the second coupling placing both couplings on top of the fold, making sure the ends are even . . . with the ends even, I proceed back to the other end of the hose and line up all folds and couplings . . . I then go to the center of the hose and squat next to it, placing the folded hose onto my shoulder and lifting with the legs . . . when unloading the hose from my shoulder, I use caution so as not to damage the couplings by holding onto the couplings and flipping the hose off my shoulder . . . there, finished . . . that was a good job . . . my evaluator requests me to demonstrate the self-locking hose roll . . . I begin by placing the male and female couplings together and then, lay the hose flat without twist to form parallel lines from the loop end to the couplings . . . I then cross one side of the hose over the other while keeping both flat . . . this forms a large loop or (butterfly) for carrying the completed donut from the shoulder . . . facing the coupling ends. I bring the back side of loop forward toward the couplings and place it on top of where the hose crosses . . . this forms a loop on each side without twists . . . I start rolling toward the couplings forming two rolls side-by-side . . . when the rolls are completed, I allow the couplings to lie across the top of each roll and adjust the loops, one short and one long, by pulling only one side of the loop through. . . almost finished with this roll . . . I place the long loop through the short loop just behind the couplings and tighten snugly . . . this forms a shoulder sling which allows the coupling ends to be carried either in front or to the rear . . . there, this roll is ready for my evaluator to inspect . . .

it is done well . . . my evaluator now instructs me to demonstrate the foot-tilt method of connecting couplings . . . I begin by standing and facing the two couplings, and, placing one foot directly behind the male coupling to apply pressure to tilt it upward, I place the other foot well apart for balance . . . grasping the female end with one hand behind the coupling and placing the other hand on the coupling swivel, I bring the two couplings together and turn the swivel with the thumb of the hand to make the connection . . . my evaluator requests a demonstration of the knee-press method of disconnecting couplings . . . I begin by grasping the hose behind the female coupling and stand the connection on end with the male coupling below . . . the hose is bent very cloe to the male coupling . . . setting the feet well apart for balance. I place the right knee upon the hose and shank of the female coupling . . . applying my body weight to compress the coupling gasket. I quickly snap the swivel in a counterclockwise direction . . . my evaluator now wants to see the over-the-hip method of coupling hose . . . I begin by grasping the female coupling with on hand on the swivel, and, bringing the hose across the same-side hip, I spread my feet apart allowing the female coupling to hang about 10 inches over the hip toward the ground. . . picking up the male coupling with the other hand, I align the couplings and turn the swivel to engage the threads . . . everything is going smoothly . . . my instructor now requests a demonstration of the donut roll . . . I begin by grasping either coupling end, carry it to the opposite end, and lie the looped section flat, straight and without twist . . . I face the coupling ends and start the roll on the male coupling side about two and one-half

feet from the bend, rolling toward the male coupling . . . as the roll approaches the male coupling, I lay the roll flat and draw the female coupling end around the male coupling to complete the roll . . . the twin donut roll is next and I begin by placing the male and female couplings together and lay the hose flat without twist to form two parallel lines with a tight loop . . . I fold the loop end over and upon the two lines to start the roll and continue to roll both lines simultaneously toward the coupling ends to form a smaller, more compact roll . . . the last task is the single section drain and carry . . . I begin by picking up either end, allowing the water to flow forward, and place the coupling in front of the body near the waist with the hose looped over one shoulder . . . I hold the hose in front of the body with both hands, walk slowly forward, and form a loop in front of the body . . . I continue to walk slowly down the hoseline, placing the gathered hose over the same shoulder, and form loops about knee high in front and behind the body until the entire section of hose has been drained and loaded on the shoulder . . . FINISHED!

APPENDIX L

IMAGERY DIALOGUE
PERFORMANCE OBJECTIVE
LADDERS/EXTENSION

Now in your glow of deep, yet attentive relaxation, I want you to create a scene in your minds eye . . . a pleasant scene of colors and sounds . . . picture yourself and your fellow firefighter trainees preparing the fire training grounds for your performance evaluations . . . picture all the sights, sounds, smells, people and everything that will make this scene real and vivid to you . . . a performance evaluation session is about to begin . . .

Now, picture yourself wearing a full set of protective clothing . . . boots, pants, bunker coat, gloves, helmet and SCBA . . . look around you . . . notice you are outside . . . it's a beautiful day with a cool, gentle breeze blowing . . . the sky is a deep blue with fleecy clouds dirfting gently by . . . nearby, you notice a fire engine equipped with a 24 foot extension ladder parked about 25 feet from a building . . . there are trainees and instructors milling around . . . you can actually feel the excitement in the air . . . for you are about to be evaluated on your ability to remove, carry and raise a 24 foot extension ladder in three minutes . . . you say to yourself, I feel calm . . . I feel relaxed . . . I feel a confident smile spread across my face . . . I feel satisfied that I have mastered this performance objective for I have practiced it many times in my mind . . . I feel secure in the knowledge that I know exactly what I have to do . . . I feel secure in the knowledge that I know exactly when and how to do it . . . there is absolutely nothing to worry about . . . my

evaluator is almost ready . . . I feel very self-confident . . . I am steady . . . I am ready . . . my evaluator is ready . . . it is time . . . a star bursts inside me sending warmth and energy to every part of my body . . . I begin by approaching the fire engine and removing the roof lader from the unit . . . I place it on the gound in a safe place . . . I find the balance point on the 24 foot extension ladder and remove it from the engine . . . stay organized . . . take it step by step . . . my body flows swiftly and smoothly . . . I walk toward the building lowering the butt and gently place the ladder flat on the ground with both sections down and heel against the building . . . a confident smile again emerges as I flow swiftly through this task . . . I make sure to check for overhead obstrctions . . . I shout, "CHECKING FOR OVERHEAD OBSTRUCTIONS" . . . I face away from the building grasping the second rung from the top, and, pivoting under the ladder, I raise it hand-overhand against the building . . . this is easy . . . I've done this many times easily within the three minute time limit . . . my whole body is energized . . . task-irrelevant thoughts do not enter my mind . . . I stand on the side of the ladder and use the elbow-against-the-hip technique as a fulcrum to bring the ladder out from the building the proper distance . . . I'm halfway through . . . I'm still well ahead of time . . . placing one foot at the heel of the beam, and with the instep, knee and leg, I steady the ladder by the beam . . . my concentration is intense . . . everything is going perfectly . . . watching the top of the ladder for balance, obstructions and hazards, I grasp the halyard and extend the fly section with hand over hand motion to the proper elevation . . . everything is smooth . . . I feel secure .

. . I make sure the dogs are in place and gently allow the fly section to make contact with the building . . . I make a point to vividly look to see that the dogs are locked and shout, "DOGS ARE LOCKED" . . . almost finished . . . this is a piece of cake . . . only three more things to do . . . I plumb and set the ladder . . . easy does it . . . I check my climbing angle approximately 75 degrees . . . I secure the halyard with a clove hitch followed with a half hitch for a safety . . . there, finished.

Now, I imagine myself performing this evaluation again . . . I picture all the sights, sounds, smells, people everything . . . only this time, I move even faster and smoother . . . I begin by approaching the fire engine and remove the roof ladder from the unit and place it on the ground in a safe place . . . I find the balance point on the 24 foot extension ladder and remove it from the engine . . . I walk toward the building, lowering the butt and gently place the ladder flat on the ground with both sections down and heel against the building . . . I make sure to check for overhead obstructions . . . I shout, "checking for overhead obstructions!" . . . I face away from the building grasping the second rung from the top, and, pivoting under the ladder, I raise it hand-over-hand against the building . . . I stand on the side of the ladder and use the elbow-against-the-hip technique as a fulcrum to bring the ladder out from the building the proper distance . . . placing one foot at the heel of the beam, and with the instep, knee and leg, I steady the ladder by the beam . . . watching the top of the ladder for balance, obstructions and hazards, I grasp the halyard and extend the fly section with hand over hand motion to the proper elevation . . . I make sure the dogs are

locked and gently lower the fly section to the building . . . I make a point to vividly look to see that the dogs are locked and shout, "DOGS ARE LOCKED." I plumb and set the ladder . . . I check my climbing angle approximately 75 degrees . . . I secure the halyard with a clove hitch followed with a half hitch for a safety . . . there, FINISHED.

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APPENDIX N

AUDIO TAPE EVALUATION

1. Did you enjoy listening to this recording?

   YES _____ NO _____

2. Did you strictly adjere to the instructions given on the recordings?

   YES _____ NO _____

3. Approximately how many times did you listen to this recording?

   1 3 5 7 10 more than 10 _____

4. Do you feel that this recording will help you score better on this performance test? YES _____ NO _____

5. Do you feel that this recording was beneficial in helping you to feel more confident and relaxed concerning this upcoming performance evaluation? YES _____ NO _____

6. Do you feel that this recording has enhanced your learning of this PO?

   YES _____ NO _____

7. Do you feel that this manner of presenting information would be beneficial in other learning situations?

   YES _____ NO _____

8. Was the quality of the recording pleasing to your ear?

   YES _____ NO _____

9. Did the listening of this recording in your spare time seem to interfere with your other studies?

   YES _____ NO _____

10. Were you able to form clear images of yourself performance this PO in your mind while listening to this recording?

    YES _____ NO _____